


PCF, the next trade barrier?




CARBON NEUTRALITY
www.sgs.com/climatechange

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SGS What is Carbon?


- GHG in terms of CO2 equivalence
- In term of the GWP from 4AR (IPCC's Fourth Assessment Report),
 - 1 ton of Methane gas = 25 tons CO₂e
 - 1 cylinder of R 134a = 32.5 tons CO₂e
 - 1 cylinder of FM 200 = 599 tons CO₂e
 - 1 ton of SF₆ = 22800 tons CO₂e
- For electricity use,
 - 1 kWh in Hong Kong Island = 0.83 kg CO₂e
 - 1 kWh in other areas in HK = 0.57 kg CO₂e
 - 1 kWh in South China = 1.0634 kg CO₂e
- A simple equation for carbon footprint:

$$\text{Footprint} = \sum_i^n (\text{AD}_i \times \text{EF}_i \times \text{GWP}_i)$$



SGS This section will brief on:

- Warning on PCF as a potential trade barrier
- The differences between PAS 2050 and the HK Guidelines on GHG reporting
- Tackle the issue through
- Product carbon footprint and
- Carbon Neutral ...



Carbon Footprint Labels Could Have Major Impact

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Press Release: Business Council for Sustainable Development

Carbon Footprint Labels Could Have Major Impact

An overnight move by the European Parliament to adopt a report which calls for carbon footprint labels on all goods and services could have major implications for New Zealand's traders.

The climate change interim report, adopted by 566 votes to 61, says consumers must be given better information about the carbon footprint of goods and services, including imported goods and services.

The report's adoption does not make it law, but indicates a stance the EU is likely to pursue into policy, the New Zealand Business Council for Sustainable Development says today.




"It sends a major wake up call to every New Zealand firm involved in our major trade with the EU," according to Business Council Chief Executive Peter Neilson.

New Zealand exports to the 27-nation bloc are worth more than \$5.2 billion a year, or 15% of all exports. New Zealand imports from the EU are valued at about \$6.9 billion, or 16.9% of all imports.

The report adopted by the EU also called for more stringent emission



Mandated GHG reporting, USA



- Entities to be Regulated: Manufacturers and facilities that use refrigerant gases and other regulated substances.
 - Facilities with refrigeration and air-conditioning systems, heating, ventilation and air conditioning systems, and
 - Companies that manufacture industrial chemicals, fossil fuels, cars and engines.
- Gases listed: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, sulfur hexafluoride, perfluorocarbons, and fluorinated gases like hydrofluorinated ethers and nitrogen trifluoride. Also, chlorofluorocarbons, hydrofluorocarbons, methyl bromide, hydroxyl, halons, nitric oxide, methyl chloroform, fluorine, chlorine, bromine and carbon tetrachloride
- Effective date: The mandatory carbon emissions reporting plan takes effect in 2010, with the first annual report due in 2011 for the previous year.



Green Public Procurement Standards

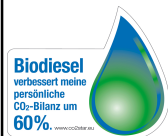
- Handbook on Green Public Procurement, 2004 published by the European Commission
- In the UK, the Sustainable Procurement Action Plan is closely linked to a series of sustainable operations targets for the Government office estate, including a pledge to go carbon neutral by 2012 and to reduce carbon emissions by 30 per cent by 2020.
- The Canada's Federal Buildings Initiative (FBI), focusing on the purchase of "green" power has led to a significant reduction of Green house gas emissions in targeted buildings. The average FBI project realised an estimated energy reduction of 25 % and GHG emission reduction of 20 %. Projected energy savings (up to 2012) result in a projected CO2 emission reduction of 884 000 tonnes or about 2 % of the total Federal energy-related emissions.



CO2 Label Initiative – EU



- The European Commission wants car manufacturers to cut average CO2 emission to 130 g/km by 2012
- To further emission reduction to 120 g/km
- My car is 190 g/km
- Measures include
 - Efficiency improvements for car components, such as tyres and air conditioning systems, and
 - A gradual reduction in the carbon content of road fuels, notably through greater use of biofuels.



French action plan

- French national action plan targets for reducing by 2010- the carbon emissions linked to transportation activities by the government with 10 % and reducing carbon emissions from public buildings with 10 %.
- Include carbon footprint under Mandatory Environmental Product Declaration by Jan 1, 2011
- Methodology – not yet known
- Pushed to incorporating a carbon element into the EU energy label scheme but faced opposition from at least six countries including the UK, Denmark, Hungary and Romania



SGS PAS 2050:2008

- Specification for the assessment of the life cycle greenhouse gas emissions of goods and services
- Step 1: Building a process map
- Step 2: Checking boundaries and prioritization
- Step 3: Collecting data
- Step 4: Calculating the footprint
- Step 5: Checking uncertainty (optional)
- Validating results
- Communicating the footprint
- Reducing emissions
- Claiming reductions



SGS Potato Crisps – 75 gm



- 75g of CO₂ per 34.5g of Cheese & Onion crisps
- Draw out the key stages in the supply chain - from sowing potato and sunflower seeds, to getting the crisps on the shelves, to finally disposing of the packet.
- Map the energy consumption directly involved in each of these stages,
- Convert this into the resulting amount of carbon emissions.
- **The Stages:**
- 1: Our raw materials: Potatoes, sunflowers and seasoning
- 2: Manufacture: Producing crisps from potatoes
- 3: Packaging our crisps
- 4: Distribution: Bringing our crisps to you
- 5: Disposal of the empty packs



<http://www.walkerscarbonfootprint.co.uk>

SGS Major differences from the HK Guidelines

- 1) HK guidelines for building, PAS 2050 for products and services
- 2) PAS 2050 requires emission declaration on GHG throughout product **life cycle** – b-to-c or b-to-b (Clause 4.5)
- 3) HK guidelines restricted to Kyoto gases, PAS 2050 **all GHG including ODS** (Clause 5.1 and Annex A)
- 4) HK guidelines use GWP from SAR, PAS 2050 uses the **4AR values** (Clause 5.1.1, Annex A)
- 5) **Verification** is optional in the HK guidelines, but a requirement of PAS 2050





Carbon storage in products

- The assessment shall include the LC GHG impacts of products containing carbon of biogenic origin (Clause 5.4)
- Eligible products (5.4.1) –
 - Non-food or non-feed
 - 50% carbon remains removed from atmosphere for 1 year or more
 - Additional, added on purpose (e.g. FSC), reuse or recycled
- A **biogenic substance** is a substance produced by life processes. It may be either constituents, or secretions, of plants or animals, for examples:
 - ✓ Cotton and wood are biogenic constituents of contemporary origin.
 - ✓ Pearls, silk and ambergris are examples of secretions of contemporary origin.



Claims of conformity (Clause 10)

- **SHALL** be made in the principal documentation or packaging provided for the products
- **SHALL** address all provisions in PAS 2050
- **SHALL** identify the type of conformity with statement identifying the verification type:
 - 1) **Independent third party verification:** "Greenhouse gas emission calculated by [company] in accordance with PAS 2050, [CB] certified"
 - 2) **Other party verification:** "Greenhouse gas emission calculated by [company] in accordance with PAS 2050, [verifier] declared."
 - 3) **Self verification:** "Greenhouse gas emission calculated by [company] in accordance with PAS 2050, self declared"



System Boundary (Clause 6.4)

Raw materials	included
Energy	included
Capital goods	excluded
Manufacturing and service provisions	included
Operation of premises	included
Transport	included
Storage	included
Use phase	included
Waste	included



My products have a HIGH footprint!!!

- Yes and certainly, with basically coal-fired energy + transportation

	EF _{grid,OM,y} (tCO ₂ /MWh)
华北区域电网	1.1169
东北区域电网	1.2561
华东区域电网	0.9518
华中区域电网	1.2783
西北区域电网	1.1225
南方区域电网	1.0634
海南省电网	0.8944





Irresistible trade barrier!!!

- With the figures announced on the products, it will be **based on consumers' free choice**
- With the increasing consumer awareness, this choice will automatically go to the one with the lower emissions...
- Only means to Tackling the Barrier is



Energy Management

- Long term
- Require regular monitoring and control
- Require investments – how about the payback!
- Require specific technical know-hows
- Require system approach
- MSE 2000:2005
- 《能源管理体系-要求》
- ISO 50001



Means to Emission Reduction or Removal Enhancement

- 1) Awareness building with new mindset and philosophy
- 2) Energy Efficiency
 - ✓ May be the most cost effective
- 3) Fuel switch and carbon sequestration
- 4) Use of renewable energy
 - ✓ Future trend and becoming more and more effective
- 5) Reduce GHG emission and replace GHG in use
- 6) Tree planting
 - ✓ On an average, one tree can remove about 20kg CO2 per year
- 7) Buy carbon credits for offsetting
 - ✓ The after all solution. Could be expensive



Energy Efficiency

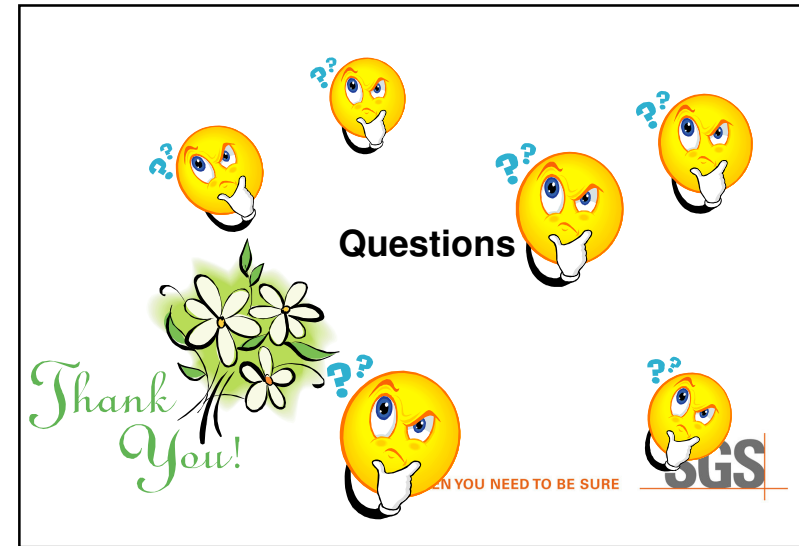
- An important task for energy management
- Identification of energy saving potential
 - Where and how much energy saving potential?
 - Confirming the potential
 - **Energy audit**
- Energy saving proposals – by ESCO
- ESPC, Energy service performance contract
- Energy saving financing
- Third party M&V (Measurement and Verification) on energy saving performance





Carbon Offsetting

- Purchase from the secondary GHG market as the last resort
- From emission exchanges
- From carbon traders
- From specific offsetting organizations
- Check genuine
- Check and avoid double counting



Conclusions

- 1) Reasonable barrier – a barrier that no one can deny
- 2) Time is running short – earliest Jan 1, 2011
- 3) Task is not easy –
 - 1) Involve stuff you are not familiar with
 - 2) Involve lots of supply chain info and data
 - 3) There remains a lack of verifiers
- 4) Definite disadvantageous due to distance and energy structure
- 5) Carbon neutral and offset – additional cost
- 6) Potential further costs and benefits from energy efficiency

